

WHAT IS CLAIMED IS

1. An air-fuel ratio control method of an engine with a venturi type fuel supply device comprising, at least, a venturi chamber located in the upstream of a throttle valve and a passage for supplying air-fuel  
5 mixture gas into the venturi chamber; wherein

the passage is equipped with a variable air bleeder valve for taking in air , and when the operating state of an external load of the engine  
10 changes, the opening of the air bleeder valve is adjusted in accordance with the change so as to control the air-fuel mixture ratio of the mixture gas incoming from the passage into the venturi chamber.

2. An air-fuel ratio control method according to claim 1, wherein the method is provided with two or  
15 more control variables for adjusting the air bleeder valve opening in accordance with the change in the operating state of the external load, and the opening of the air bleeder valve is adjusted by switching the  
20 two or more control variables.

3. An air-fuel ratio control method according to claim 2, wherein the method is provided with a valve opening transition processing for adjusting the air  
bleeder valve opening, thereby the opening is adjusted  
25 gradually, and the transition quantity and the

transition time of the air bleeder valve on the occasion of switching from "there is no external load" to "there is an external load" condition are set differently from those on the occasion of switching from "there is an external load" to "there is no external load" condition.

4. An air-fuel ratio control method according to claim 1, wherein the venturi type fuel supply device further comprises a bypass passage bypassing the throttle valve and a bypass valve installed in the bypass passage, the bypass valve opening is adjusted based on the operating state of the external load, and the air bleeder valve opening is adjusted in accordance with the adjustment quantity of the bypass valve opening.

5. An air-fuel ratio control method according to claim 1, wherein the change in the operating state of the external load is caused by switchover of an air-conditioner switch ON/OFF of a vehicle equipped with the engine.

6. An air-fuel ratio control method according to claim 1, wherein the change in the operating state of the external load is caused by a change of the electrical load of a vehicle equipped with the engine.

7. A venturi type fuel control appliance,

comprising, at least,

a venturi chamber located in the upstream of a throttle valve of an engine,

a passage for supplying air-fuel mixture gas into  
5 the venturi chamber,

a variable air bleeder valve, installed in the passage, for taking in air,

a detection means for detecting the operating state of the external load of the engine,

10 a control means that obtains control variables for adjusting the air bleeder valve opening, when the operating state of the external load of the engine changed, based on the detected operating state of the external load, and

15 an air bleeder valve adjustment means for adjusting the opening of the air bleeder valve in accordance with the control variables so as to control an air-fuel ratio of the mixture gas incoming from the passage into the venturi chamber.

20 8. A venturi type fuel control appliance according to claim 7, wherein the control means obtains two or more control variables in accordance with the information from the detection means, and the air bleeder valve adjustment means operates by  
25 switching the two or more control variables.

9. A venturi type fuel control appliance according to claim 7, further comprising a bypass passage bypassing the throttle valve, a bypass valve installed in the bypass passage, and a bypass valve  
5 adjustment means for adjusting the bypass valve opening based on the change of the operating state of the external load, wherein the air bleeder valve adjustment control means adjusts the air bleeder valve opening in accordance with the adjustment quantity of  
10 the bypass valve opening.

10. An air-fuel ratio control appliance according to claim 7, wherein the detection means is a means for detecting the operating state of the air-conditioner ON/OFF switch of a vehicle equipped with the engine.

15 11. An air-fuel ratio control appliance according to claim 7, wherein the detection means is a means for detecting the operating state of the electrical load of a vehicle equipped with the engine.